



ORIGINAL RESEARCH PAPER

Dermatology

GENITAL WART: CLINICAL STUDY IN A TERTIARY CARE CENTRE

KEY WORDS: anogenital wart, HPV, HIV, Malignancy

Dr R Sudha\*

MD(DVL) Assistant Professor, Department of STD, Madurai Medical College, Madurai, Tamilnadu, India. \*Corresponding Author

ABSTRACT

**Background:** Majority of the human papilloma virus(HPV) infection is subclinical and asymptomatic, hence anogenital wart caused by HPV was the study undertaken.

**Materials and Methods:** A descriptive clinical study on Genital wart among 4356 STI clinic attendees was conducted for two years.

**Results:** The incidence of anogenital wart is 2.25% and in HIV cases it is 2.15%. The Male female sex ratio is 2:1. Heterosexual behaviour is predominantly recorded among diseased. HIV was the commonest associated STI. Promiscuity in HIV patients is statistically significant. Recurrence rate recorded was 8.7%. Malignancy was documented as complication. Cryotherapy and podophyllin were the main treatment modalities. Associated STI were treated concurrently. Follow-up recommended as per need.

**Conclusion:** The incidence is less, HPV-HIV coinfection is the commonest noted. Multiple STI, promiscuity and malignancy were noticed among HPV-HIV coinfection. Prevention strategies were insisted and Health education regarding pap smear screening and HPV vaccination was given for all.

Introduction

Anogenital warts synonymously termed as Condylomata acuminata refers to the genital HPV infection transmitted through sexual contact. The microabrasions in the genitalia and anus favours the transmission of HPV virions from the infected partner to the recipient. Of the 40 HPV types identified to cause anogenital wart, low risk HPV types 6 and 11 tend to produce the lesion in about 90% cases. Most of the HPV infection is subclinical and asymptomatic in approximately 15% of the general population.<sup>1</sup> The burden of symptomatic anogenital warts itself is less documented in our region. In India the incidence of genital warts ranges from 2 to 25.2% in STI clinic.<sup>1</sup> Hence this study on anogenital wart was conducted.

Aim

To find out the incidence, risk factors, STIs associated with anogenital warts, the recurrence rate and its complications.

Materials and methods

A total 4356 patients attended STD clinic from May 2014 to April 2016 (2 years) and 2382 had STIs. Among the diagnosed STIs 98 cases had anogenital warts and they were included in our study. Detailed history was sought and clinical examination was done in all after obtaining consent. In both genders diagnosis was made clinically if they have visible verrucous papules or plaque on external genitalia, anal and perianal region. Screening tests for syphilis and HIV were done in all patients.

Endocervical smear for Gram stain, wet mount and KOH mount were done in all female patients to screen them for associated STIs. Other relevant investigations were done according to their clinical presentation. All patients were treated with cryotherapy or 20% podophyllin resin and associated STIs were also treated. All traceable contacts were screened for STIs and were treated accordingly. Follow-up done as per their need, the recurrence of lesions and its complications were recorded.

Observation and Results

Incidence

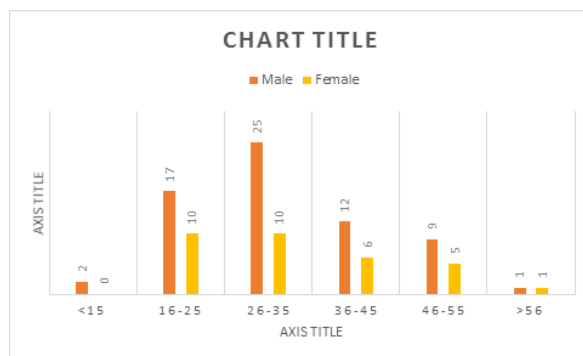
In our study the incidence of anogenital warts is 2.25% (98/4356). The incidence of anogenital wart among HIV is 2.15% (20/927). The incidence of anogenital warts among STIs is 4.11% (98/2382). [Table 1].

Table 1

	Anogenital warts	No anogenital warts	Total	Incidence
HIV negative	78	3351	3429	2.27%
HIV positive	20	907	927	2.15%
Total	98	4258	4356	2.25%

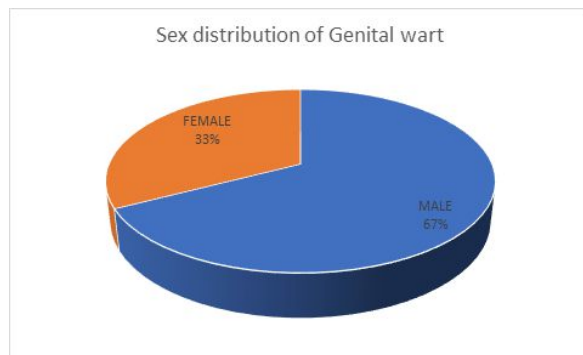
Baseline characteristics

Chart - 1



Majority of the cases fall in the 26-35 years age group in this study. The youngest was 1.5 years old with perianal wart.[Chart-1] The mean age of the patient is 33 years. The sex ratio of anogenital warts is 2:1 with male predominance. Of the 98 cases, 66 were males and 32 were females.[Chart-2]

Chart - 2



The socio-economic status of the cases were classified as middle income, low income group and dependents. The dependents include unemployed, student and housewives.[Table-2]

Table - 2

Income	Male	Female
Middle	36	2
Low	21	7
Dependents	9	23

Heterosexual behaviour was present among 44 males, 15 were bisexuals and 3 were homosexuals while 2 males denied sexual exposure. All females had heterosexual behaviour in our study. Promiscuity was elicited in 70% of male patients (45 cases). But only 3% of female (1 case) had promiscuous behaviour. The promiscuity of genital wart cases in relation to their HIV status was analysed. [Table-3,4]

**Table - 3**

	HIV positive males	HIV negative males	P value
Promiscuous	15	30	0.03
Non promiscuous	2	19	

**Table - 4**

	HIV positive females	HIV negative females	P value
Promiscuous	1	0	0.001
Non promiscuous	2	29	

**Clinical features**

The morphological type seen were verrucous papules, Condylomata acuminata and keratotic lesions. Single wart seen in 9 cases (9%) and all others had multiple lesions.

Distribution of wart on frenulum, mucosal aspect of prepuce, glans penis, coronal sulcus, shaft of penis and perianal region in descending frequency was seen among male patients. Involvement of labia majora, minora, fourchette, clitoris and perianal region was noted among females in descending order. Perianal wart was seen in 13 cases, of which 2 were male child each of 1.5yrs and 10yrs of age. Perianal wart was seen in both genders irrespective of their sexual behaviour.

**Associated STIs**

Anogenital warts patients having associated STIs were 32 cases (32%). HIV was the commonest detected in 20 cases (20%). Multiple concurrent STIs were reported in 6 HIV patients. Other viral STIs associated were genital herpes and molluscum contagiosum. Bacterial STIs associated were bacterial vaginosis, syphilis and mucopurulent cervicitis. Superadded candidal infections were noticed among 6 cases. Trichomoniasis was seen in one female HIV patient. (table-5)

**Table - 5**

Associated STI in Genital wart	No. of patients
HIV	14
Bacterial vaginosis	2
Vulvovaginal candidiasis	3
Primary syphilis	1
Latent syphilis	1
Genital herpes	2
HIV, Bacterial vaginosis, Trichomoniasis	1
HIV, Bacterial vaginosis, vulvovaginal candidiasis	1
HIV, Molluscum contagiosum	2
HIV, Molluscum contagiosum, vulvovaginal candidiasis	1
HIV, Genital herpes	1
Mucopurulent cervicitis	1
Candidal Balanoposthitis	1

**HIV and anogenital warts**

Among 20 cases of HIV with anogenital warts, 17 (85%) were males and 3 (15%) were females. The promiscuous behaviour was present among 16 cases (80%). Apart from warts those of 6 cases (30%) had one or more STIs. The opportunistic infections were noticed among 3 cases (15%) that includes pulmonary tuberculosis and oral candidiasis. Immunological screening revealed CD4 count ranging from 57 to 666 cells/cumm.

**Pregnancy and anogenital warts**

Out of 32 diagnosed females, six (18.75%) were detected during their antenatal period. These patients had pink and larger warts.

Two of their spouse had concordant genital wart.

The available treatment modalities were cryotherapy, podophyllin resin, electrocautery and surgical excision. Cryotherapy was administered to wart lesion in 65 patients and podophyllin resin was applied for 24 cases selectively with precaution. Surgical excision was done in 2 cases. Patients didn't turn up for treatment were 7 in count.

On partner screening six of the spouses had anogenital warts. Other STIs diagnosed in them were HIV and latent syphilis each in 1 case.

Follow-up was recommended for all cases, recurrence of lesions were noticed among 8.7% (8/91 cases). A 52 year old uncircumcised HIV positive male patient from low socio-economic status with recurrent warts developed penile squamous cell carcinoma after one and a half years.

**Discussion**

Anogenital warts, a sexually transmitted disease is caused by human papilloma virus. HPV can produce a disease spectrum from latent, subclinical infection to anogenital carcinoma. The classification of high risk and low risk type of HPV is done by its ability to produce anogenital carcinoma. The incidence of anogenital wart in our study is 2.25 % which is low when compared to the study conducted at Davangere (5.92%), Ahmedabad (10.09%), Kottayam (17.5%) and Rohtak (27.3%) the other regions in India.<sup>2</sup>

The male female sex ratio in our study is 2:1 where as it was 4.7:1 in Jain et al study.<sup>2</sup> This may indicate increased health seeking behaviour and awareness among our female patients. The mean age of our study group was 33 years of age which is less when compared to the study by Shashikant Balakrishna Dhumale et al (38 years for male).<sup>3</sup> In this study 63% of cases were between 16 to 35 years age group. This confers that sexually active group were the core group and early indulgence in sex was identified as one of the risk factor. The socio-economic status of the patients revealed 61% prevalence of disease among low income group and dependants. Most of the female patients were dependent on their spouse for economy and 96% of the females had only marital contact. The source of infection among them being their spouse.

Heterosexual behaviour was the commonest sexual orientation in our study. Promiscuity was elicited in 70% of male patients. The promiscuous behaviour among HIV positive males and females had significant p value of 0.03 and 0.001 when compared to HIV negative cases. This highlights the need for behaviour change and prevention strategies to reduce the disease burden.

Perianal wart in two children suggested vertical transmission in 1.5 years old child and non-sexual transmission in 10 years old child. History and examination rules out other STI in them hence the possibility of non sexual transmission was considered. HPV spreads by direct skin-skin contact. The latent infection and subclinical infection has the ability to transmit the disease supports the non sexual mode of transmission<sup>4</sup> though Anogenital warts was absent in both their parents on screening.

HIV was the most common STI associated with anogenital wart. Candidiasis, bacterial vaginosis, genital herpes, molluscum contagiosum, syphilis, mucopurulent cervicitis and Trichomoniasis were the other associated STIs in descending frequency. HIV (66%) was detected as the associated STI in anogenital wart cases in the study by Shilpee Choudhry et al<sup>5</sup> but it was 20% in our study. Promiscuity was present among HIV positive males and females significantly. Multiple concurrent STIs were reported only in HIV positive genital wart cases. The warts in HIV patients were larger and extensive. The number of Langerhans cells, CD4 T lymphocytes, macrophages, neutrophils and natural killer cells were reduced in HIV infection. HPV specific memory cells that mediates immune response are not completely restored with Antiretroviral therapy showing its limited benefits in regression of warts.<sup>6</sup>

Penile squamous cell carcinoma was the malignancy noticed. The risk factors found in our case were age above 50 years, low income, HIV reactivity, genital wart with frequent recurrence, lack of circumcision. The other risk factors were smegma, poor genital hygiene, chronic balanitis, lichen sclerosis et atrophicans and psoralen.<sup>7</sup>

Anogenital warts in pregnant women were larger and pink due to increased vascularity and hormonal changes during pregnancy. All these antenatal mother were HIV negative and were treated accordingly.

Patient wise selection for treatment modality was made and were treated subsequently. Associated STI were treated concurrently. Follow-up was recommended in all.

### Conclusion

Though the incidence of anogenital wart is low and its association with the HIV is not significant in our study, HPV-HIV coinfection is the commonest one. Multiple STI, promiscuity, malignancy were noticed among HPV-HIV coinfection. Prevention strategies like behaviour change and condom promotion were insisted among the diseased. Health education regarding pap smear screening and HPV vaccination were given for all patients.

### REFERENCES

1. Vinod K Sharma, Sujay Khandpur. Epidemiology of sexually transmitted infections. In: Vinod K Sharma editor. Sexually Transmitted Diseases and HIV/AIDS. New Delhi: Viva books; 2009. p.20-1.
2. Jain V K, Dayal S, Aggarwal K, Jain S. Changing trends of sexually transmitted diseases at Rohtak. Indian J Sex Transm Dis 2008; 29: 23-5.
3. Shashikant Balakrishana Dhumale, Shimpa Sharma, Arvind Gulbake. Anogenital warts and HIV status- A clinical study. Journal of clinical and Diagnostic Research. 2017 Jan, vol-11(1)wc01-wc04.
4. S.Bussen, M.Sutterlin, U.Schmidt and D.Bussen. Anogenital warts in Childhood – Always a marker for Sexual Abuse?. Geburtshilfe Frauenheilkd. 2012 Jan; 72(1):43-48.
5. Shilpee Choudhry, V.G.Ramachandran, Shukla Das, S.N.Bhattacharya, Narendra Singh Mogha. Characterization of patients with multiple sexually transmitted infections: A hospital – based survey. Indian J Sex Transm Dis. 2010 Jul – Dec ; 31(2):87-91.
6. Casio Carassan de Camargo, Karen Ingrid Tasca, Monica Benwart Menden, Helio Amante Miot, Lenice do Rosario de Souza. Prevalence of anogenital warts in Men with HIV/AIDS and Associated factors. The Open AIDS Journal 2014, 8, 25-26.
7. Marchionne E, Perez C, Hui A, Khachemoune A. Penile squamous cell carcinoma: a review of the literature and case report treated with Moh's micrographic surgery. An Bras Dermatol 2017; 92(1):95-9.